



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-1583; Project Identifier MCAI-2022-01486-T; Amendment 39-22282; AD 2022-25-51]**

**RIN 2120-AA64**

**Airworthiness Directives; Airbus Canada Limited Partnership (Type Certificate previously held by C Series Aircraft Limited Partnership (CSALP); Bombardier, Inc.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all Airbus Canada Limited Partnership Model BD-500-1A10 and BD-500-1A11 airplanes. The FAA previously sent this AD as an emergency AD to all known U.S. owners and operators of these airplanes. This AD was prompted by reports of the autopilot/autothrottle system design resulting in inadvertent engagement of the autopilot when the flightcrew was attempting to engage the autothrottle late into the take-off phase or when attempting to re-engage the autothrottle during takeoff after uncommanded disconnect. This AD requires revising the Limitations section of the existing airplane flight manual (AFM) by revising the title of the existing autopilot AFM limitation, include a new warning prior to the existing autopilot engagement limitations, and include a new limitation prohibiting selecting or reselecting autothrottle during takeoff after thrust levers are advanced to the takeoff setting after the existing autopilot engagement limitations. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Emergency AD 2022-25-51, issued on November 22, 2022, which contained the requirements of this amendment, was effective with actual notice.

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1583; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Steven Dzierzynski, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7367; email [9-avs-nyaco-cos@faa.gov](mailto:9-avs-nyaco-cos@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

The FAA invites you to send any written data, views, or arguments about this final rule. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2022-1583; Project Identifier MCAI-2022-01486-T” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to [regulations.gov](https://www.regulations.gov), including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

### **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Steven Dzierzynski, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-

7367; email 9-avs-nyaco-cos@faa.gov. Any commentary that the FAA receives that is not specifically designated as CBI will be placed in the public docket for this rulemaking.

## **Background**

The FAA issued Emergency AD 2022-25-51, dated November 22, 2022 (Emergency AD 2022-25-51), to address an unsafe condition on all Airbus Canada Limited Partnership Model BD-500-1A10 and BD-500-1A11 airplanes. The FAA sent the emergency AD to all known U.S. owners and operators of these airplanes. Emergency AD 2022-25-51 requires revising the Limitations section of the existing AFM by revising the title of the existing autopilot AFM limitation, include a new warning prior to the existing autopilot engagement limitations, and include a new limitation prohibiting selecting or reselecting autothrottle during takeoff after thrust levers are advanced to the takeoff setting after the existing autopilot engagement limitations.

Emergency AD 2022-25-51 was prompted by Emergency AD CF-2022-64, dated November 17, 2022 (referred to after this as the MCAI), issued by Transport Canada, which is the aviation authority for Canada, to correct an unsafe condition on all Airbus Canada Limited Partnership Model BD-500-1A10 and BD-500-1A11 airplanes.

There have been 38 in-service events, including two nearly catastrophic events, whereby the flightcrew inadvertently engaged the autopilot while attempting to engage the autothrottle late into the take-off phase or when re-engaging the autothrottle. Engaging the autopilot below 400 feet (ft) above ground level (AGL) is prohibited by the existing AFM. However, the control panel for autothrottle and autopilot engagement is structured in such a way that it is possible for the flightcrew to mistakenly engage the autopilot when attempting to re-engage the autothrottle. The autothrottle system is prone to disconnect due to different sources for airspeed between the autothrottle and the flight control system monitor, which can occur during turbulence. The disconnect may also occur due to different sources for pressure altitude between autothrottle application and

autothrottle monitor. Additionally, the autopilot engagement is not currently inhibited during takeoff and with sufficient speed will cause the airplane to command a pitch increase to capture the pitch target marker, which may cause premature rotation, including at speeds below  $V_1$  at the time of autopilot engagement. Premature airplane pitch up will require the flightcrew to intervene immediately, and depending on the speed, could lead to a tail strike. If the flightcrew does not reject the takeoff, premature rotation due to autopilot engagement below  $V_r$  may result in low-energy liftoff.

In September 2022, there was an incident in which the autothrottle disengaged during takeoff, and when the flightcrew attempted to re-engage the autothrottle, they mistakenly engaged the autopilot, which resulted in the aircraft rotating below the  $V_1$  speed. This resulted in a low-energy takeoff, which is hazardous as it could lead to the airplane stalling and/or impacting terrain.

Existing procedures provide operational recommendations and procedures to follow for autothrottle selection and in the event of an autothrottle disconnect during takeoff. The autothrottle cannot be re-engaged if it becomes disconnected on takeoff above 60 knots and below 400 ft AGL. Therefore, the flightcrew should not attempt to re-engage the autothrottle if it becomes disconnected on takeoff. As previously mentioned, trying to re-engage autothrottle below 400 ft AGL may result in inadvertent engagement of the autopilot.

This AD is intended to address inadvertent engagement of the autopilot below 400 ft AGL by adopting the autopilot engagement warning statement specified in Transport Canada Emergency AD CF-2022-64. The intended action is to incorporate the new warning statement within the existing Autopilot Engagement AFM limitation by placing the warning statement just prior to the two existing limitations, “The minimum height for engagement of autopilot is 400 feet AGL,” and “The minimum height for use of autopilot is 80 feet AGL.” This AD differs from the Transport Canada Emergency AD

by also requiring revising the existing AFM to include an additional limitation (below the two existing limitations) that specifies, “To avoid inadvertent engagement of autopilot, during takeoff, the autothrottle must not be selected or re-selected after the thrust levers are advanced to the takeoff setting until the aircraft is at or above 400 feet AGL.”

Furthermore, this AD requires the title of the existing AFM limitation to be revised from “Autopilot Engagement” to “Autopilot and Autothrottle Engagement.” Therefore, the AFM limitation specified in figure 1 to paragraph (g) of this AD, titled “Autopilot and Autothrottle Engagement,” replaces the existing AFM limitation titled “Autopilot Engagement.” This condition, if not addressed, could result in premature rotation due to inadvertent autopilot engagement, possibly leading to tail-strike, inability to climb, and loss of control of the airplane.

You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1583.

#### **FAA’s Determination**

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA’s bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI described above. The FAA is issuing this AD after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

#### **AD Requirements**

This AD requires revising the Limitations section of the existing AFM by revising the title of the existing AFM limitation titled “Autopilot Engagement”, include a new warning prior to the existing autopilot engagement limitations, and a new limitation prohibiting selecting or reselecting autothrottle during takeoff after thrust levers are advanced to the takeoff setting after the existing autopilot engagement limitations.

## **Interim Action**

The FAA considers that this AD is an interim action. If final action is later identified, the FAA might consider further rulemaking then.

## **Justification for Immediate Adoption and Determination of the Effective Date**

Section 553(b)(3)(B) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that required the immediate adoption of Emergency AD 2022-25-51 issued on November 22, 2022, to all known U.S. owners and operators of these airplanes. Due to an autopilot/autothrottle system design, the flightcrew has inadvertently engaged the autopilot while attempting to engage the autothrottle during a critical phase of flight. The most recent incident, in September 2022, resulted in a low-energy takeoff when the flightcrew attempted to re-engage the autothrottle but mistakenly engaged the autopilot. Such a result is hazardous as it could lead to the aircraft stalling and/or impacting terrain. The FAA found that the risk to the flying public justified waiving notice and comment prior to adoption of this rule because inadvertent autopilot engagement below 400 ft AGL could result in premature rotation due to inadvertent autopilot engagement, possibly leading to tail-strike, inability to climb, and loss of control of the airplane. These conditions still exist, therefore, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b)(3)(B).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

### **Regulatory Flexibility Act**

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without notice and comment, RFA analysis is not required.

### **Costs of Compliance**

The FAA estimates that this AD affects 76 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

#### **Estimated costs of Required Actions**

| <b>Action</b> | <b>Labor cost</b>                     | <b>Parts cost</b> | <b>Cost per product</b> | <b>Cost on U.S. operators</b> |
|---------------|---------------------------------------|-------------------|-------------------------|-------------------------------|
| AFM revision  | 1 work-hour X \$85<br>per hour = \$85 | \$0               | \$85                    | \$6,460                       |

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. “Subtitle VII: Aviation Programs” describes in more detail the scope of the Agency’s authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority



because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2022-25-51 Airbus Canada Limited Partnership (Type Certificate Previously Held by C Series Aircraft Limited Partnership (CSALP); Bombardier, Inc.):** Amendment 39-22282; Docket No. FAA-2022-1583; Project Identifier MCAI-2022-01486-T.

#### **(a) Effective Date**

The FAA issued Emergency Airworthiness Directive (AD) 2022-25-51 on November 22, 2022, directly to affected owners and operators. As a result of such actual

notice, the emergency AD was effective for those owners and operators on the date it was provided. This AD contains the same requirements as the emergency AD and, for those who did not receive actual notice, is effective on [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all Airbus Canada Limited Partnership (Type Certificate previously held by C Series Aircraft Limited Partnership (CSALP); Bombardier, Inc.) Model BD-500-1A10 and BD-500-1A11 airplanes, certificated in any category.

**(d) Subject**

Air Transport Association (ATA) of America Code 22, Autoflight.

**(e) Unsafe Condition**

This AD was prompted by reports of the autopilot/autothrottle system design resulting in inadvertent engagement of the autopilot when the flightcrew was attempting to engage the autothrottle late into the take-off phase or when attempting to re-engage the autothrottle during takeoff after uncommanded disconnect. The FAA is issuing this AD to address inadvertent engagement of the autopilot below 400 feet above ground level (AGL) when the flightcrew attempts to engage autothrottle. The unsafe condition, if not addressed, could result in premature rotation due to inadvertent autopilot engagement, possibly leading to tail-strike, inability to climb, and loss of control of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Revision of Existing AFM**

Within 7 days after the effective date of this AD, revise the Limitations section of the existing airplane flight manual (AFM) to include the information specified in figure 1

to paragraph (g) of this AD. This may be accomplished by inserting a copy of figure 1 to paragraph (g) of this AD into the existing AFM. Using an AFM revision that includes information identical to that in figure 1 to paragraph (g) of this AD is acceptable for compliance with the requirement of this paragraph.

**Figure 1 to paragraph (g): Autopilot and Autothrottle Engagement Limitation**

**AUTOPILOT and AUTOTHROTTLE ENGAGEMENT**

**WARNING**

Autopilot engagement during takeoff roll can result in premature rotation, possibly leading to tail-strike, inability to climb or loss of control. Immediate crew intervention is required.

The minimum height for engagement of autopilot is 400 feet AGL.

The minimum height for use of autopilot is 80 feet AGL.

To avoid inadvertent engagement of autopilot, during takeoff, the autothrottle must not be selected or re-selected after the thrust levers are advanced to the takeoff setting until the aircraft is at or above 400 feet AGL.

**(h) Additional AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; email: 9-avs-nyaco-cos@faa.gov, telephone 516-228-7300. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method

approved by the Manager, New York ACO Branch, FAA; or Transport Canada; or Airbus Canada Limited Partnership's Transport Canada Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

**(i) Additional Information**

(1) Refer to Transport Canada Emergency AD CF-2022-64, dated November 17, 2022, for related information. This Transport Canada Emergency AD may be found in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-1583.

(2) For more information about this AD, contact Steven Dzierzynski, Aerospace Engineer, Avionics and Electrical Systems Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7367; email [9-avs-nyaco-cos@faa.gov](mailto:9-avs-nyaco-cos@faa.gov).

**(j) Material Incorporated by Reference**

None.

Issued on December 7, 2022.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

[FR Doc. 2022-26971 Filed: 12/8/2022 11:15 am; Publication Date: 12/12/2022]